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ESTIMATED U.S. PETROLEUM BALANCE

SUMMARY

Cold weather and continued growth in gasoline and kerosine jet fuel deliveries helped to bring November's year-to-year increase for all products to over 1.1 million B/D or 7.3 percent. The unusually large increase--nearly twice the estimated underlying trend in consumption—is also at least partly due to below-trend deliveries last year. Residual fuel oil's rise of over 11 percent, though contributing to the overall increase as well, was smaller than prior months' increases, which had peaked during the summer months when seasonal electricity demand is typically high.

Unleaded's market share jumped to 72.6 percent in November, an increase of more than 6 points over last year. Regional introductions and market testing of mid-grade unleaded, spurred by lead phasedown requirements and logistical considerations, are pushing unleaded's share upward.

Domestic crude oil production continues to decline at an annual rate in excess of half a million barrels per day. For November, production in the lower 48 fell to less than 6.6 million B/D, a level not typical since the mid-1950s until this year. Even in Alaska, where production has held relatively steady, lower prices are altering production decisions.

Imports rose only about 300 thousand B/D year-to-year, but this is largely a reflection of stepped-up OPEC production and increased imports last fall—this November's imports were still nearly 6.4 million B/D and the highest for November since 1979. Refinery operations were up from last year; distillate production picked up after the cold snap mid-month, reaching the second-highest November level of the 1980's. Total stocks, which had been building more than seasonally earlier in the year, fell 8 million barrels in November in a month when they have historically averaged a roughly 10 million barrel increase. November's increased deliveries, combined with little incentive to add to inventories still 8 percent higher than a year ago, contributed to the drop. Despite cold weather, distillate stocks were drawn down by only 1 million barrels during the month, and at month-end were still more than 10 million barrels ahead of last November's.

PRODUCTS SUPPLIED[1/]

Motor Gasoline

UNLEADED'S SHARE JUMPS. The roughly 4 percent growth rate in gasoline deliveries apparent since early summer—double the rate of last year—slackened only slightly in November with a 3.4 percent, 233 thousand B/D rise. Retail prices that, after adjusting for inflation, are even lower than before the Arab oil embargo of 1973 continue to encourage increased driving; recent increases in miles travelled have been in the 4 to 4.5 percent range. The implied improvement in fuel efficiency is small—1 percent or less. However, recently-released data for 1985 show only a 1 percent increase over 1984, and it could well be that reduced interest in fuel efficiency, both in the use of existing vehicles and in new car purchase decisions, has cut this year's mileage improvement even further.

Unleaded's market share jumped over 6 percentage points year-to-year, to 72.6 percent, an indicator of an acceleration of the trend away from leaded gasoline. Market share increases earlier in the year had averaged 4.4 percentage points. Many companies have introduced mid-grade unleaded in selected markets, higher in octane than regular unleaded but similar to leaded regular in octane. Premium unleaded sales have also continued to expand, but mostly at the expense of unleaded regular. Draws on the government's lead bank by mid-year already amounting to nearly half of the credits accumulated as of the end of 1985, a mandated reduction in lead content to a minimal 0.1 gram/gallon after next year, leaded/unleaded storage segregation considerations, and a distribution and marketing system largely designed to handle only three grades, all are contributing to the rapid erosion of leaded regular's share.

Distillates

COLD WEATHER ADDS TO DEMAND. Distillate deliveries rose nearly 12 percent (323 thousand B/D), following a decline in September and minimal change in October. But, as in past months, deliveries apparently differ somewhat from indicated consumption. Nationally, November was about 10 percent colder than last year; as a result of changes from last year even greater than this on the East Coast and in the Midwest, weather is estimated to have increased distillate consumption by 200 thousand B/D compared with last November. Growth in trucking has been variable this year, but recent months show increases of 5 to 6 percent, and rail activity has also been experiencing gains of a few percent. Together these have added perhaps 60 thousand B/D to distillate consumption, with little net contribution from other sectors. Thus, indicated consumption gains explain about four fifths of November's deliveries increase.

With the ups and downs in distillate supplied of the past few months, a longer view gives a more accurate picture of distillate trends. When averaged over the past eleven months and adjusted for weather, distillate deliveries' growth rate has been between 1 and 2 percent, mostly due to increased transportation use.

Residual Fuel Oil

SLACKENING IN GROWTH CONTINUES. Though residual fuel oil deliveries were up over 11 percent (143 thousand B/D) in November, the increase represents a continued slackening in residual fuel oil's growth rate from increases which had gone as high as 43 percent during the summer. The primary source of this slippage has been the electric utility sector, where the seasonal decline in electricity demand during the fall has disproportionately cut back the use of incremental fuels such as residual fuel oil. By September, heavy fuel oil burned at utilities had declined by 30 percent from July's 835 thousand B/D while total generation declined only 15 percent. It is likely that utilities' year-to-year increase has fallen to roughly 150 thousand B/D in November--accounting for the entire increase in residual fuel oil deliveries.

Other residual fuel oil demand sectors remain nearly flat. Year to date, a 2 to 3 percent decline in bunkering use is estimated, with a similar-sized increase for industrial and other uses.

Kerosine Jet Fuel

USAGE MAY NOT MATCH 18 PERCENT DELIVERIES RISE. Kerosine jet fuel's 17.6 percent, 188 thousand B/D increase for November was even larger than the roughly 13 percent increases of the prior two months. Available seat miles, however, have been rising 9 to 10 percent recently. Even with load factors 2 to 3 percentage points higher than last year, it is unlikely that November's large deliveries increase is entirely the result of increased consumption, which was more likely in the 10 to 12 percent range. It is also unlikely that holiday travel, reportedly strong this year, pushed consumption up markedly for the month as a whole. In fact, though the Thanksgiving holiday is one of the heaviest travel periods of the year, air travel for the month as a whole is typically well below that of the mid-summer seasonal peak.

Other Oils

STRONG IN NOVEMBER. Contrasting with the weak performance for most of this year, deliveries of all other oils rose 5.6 percent (211 thousand B/D) in November; cold weather's impact on propane deliveries is at least partly responsible, with probable continued increases for heavier petroleum-based petrochemical feedstocks as well.

According to Department of Energy data, deliveries of total liquefied petroleum gases have fallen about 6 percent for the first nine months, with shifts to heavier petroleum-derived petrochemical feedstocks, encouraged by lower crude oil prices, a significant contributor. While oil prices this year have dropped to about half of last year's level, prices of natural gas and extracted ethane and propane have only declined about 30 percent. Despite the continued price disparity, there was some movement back towards lighter feedstocks during the third quarter. Even so, year-to-year growth of heavier feedstocks deliveries continued with a 10 percent increase for the third quarter while ethane and propane deliveries fell 8 and 13 percent, respectively.

Asphalt deliveries and refinery gas usage were both up about 5 percent for September year to date, while coke deliveries rose 3 percent. Failure of Congress to pass a highway bill before it recessed this year apparently has had little effect on asphalt demand as of yet, though project planning for 1987 is being affected.

(In millions of B/D)	NOVEMBER ESTIMATES			YEAR-TO-DATE ESTIMATES		
	1986	1985	% Change	1986	1985	% Change
—Total domestic products supplied	16.6	15.5	7.3	16.1	15.6	2.9
—Motor gasoline supplied	7.0	6.8	3.4	7.0	6.8	2.6
—Distillate fuel oil supplied	3.1	2.7	11.8	2.9	2.8	1.8
—Residual fuel oil supplied	1.4	1.3	11.1	1.4	1.2	17.3

SUPPLY[1/]

Total supply fell 249 thousand B/D in November, partly because of comparision with a month of increased imports a year ago. Domestic supply's 563 thousand B/D drop, more than enough to offset the 314 thousand B/D increase in imports, also contributed to the decline.

Production

LOWER 48 DOWN MORE THAN HALF MILLION B/D.

Crude oil production dropped about 440 thousand B/D year to year, a 74 thousand B/D increase in Alaska only partially offsetting a decline for the lower 48 of over half a million barrels per day.

So far this year, production has declined an average of about 50 thousand B/D per month. This rate of decline is equivalent to an annual drop in excess of half a million barrels per day, roughly in line with the rate implied in API's *Crude Oil Price Effects Survey* for the $15-per-barrel scenario. Conducted early this year, the survey was based on an aggregation of twenty-one companies' estimates of their own activity levels for 1987 and 1992 for several oil price scenarios.

Though the decline in production is in line with the survey's results, this year's employment and drilling declines are well ahead of the trend implied by the survey. For the $15-per-barrel scenario—closest to recent experience—industry employment was projected to decline by 200,000 jobs by 1987; to date, employment has already declined by 150,000 from the end of last year. Also according to that scenario, well completions declined by 55 percent from 1985 to 1987, while current API estimates of third quarter completions already show a 48 percent year-to-year decline. Third quarter oil well completions (not included in the survey) are estimated to be down even more—by over 60 percent.

Even in Alaska, where production is ahead about 50 thousand B/D year to date and development work continues, lower oil prices are affecting some production decisions. A proposal to suspend North Slope production at Milne Point for economic reasons is currently undergoing the approval process. Current production there is about 10 thousand B/D.

Imports

HIGHEST NOVEMBER LEVEL OF 1980s.

November's 5.2 percent, 314 thousand B/D year-to-year rise in imports contrasts sharply with higher increases, some over 2 million B/D, earlier in the year. The explanation lies not so much in reduced imports this November—imports were up from October's level and were the highest for November since 1979—but in the surge in imports that began last fall as some OPEC members' efforts to increase market share began to take effect. Imports in November of last year had risen by nearly 1.5 million B/D within three months to reach their highest level of 1985.

Product imports declined 150 thousand B/D this November, year to year, with declines for most major products. The decline for distillates largely reflects unusually high imports last November. Year to date, however, product imports have risen about 90 thousand B/D.

Refinery Operations

UTILIZATION UP 3 PERCENTAGE POINTS.

Refining activity picked up in the latter half of the month, in part a response to the arrival of colder weather in many parts of the country. This brought the month's utilization rate to about 83 percent, up nearly 3 points from last year. Though distillate production was at the second highest level for November since 1979, it declined about 5 percent from last November—a month when refinery distillate yields had been unusually high.

Inventories

STOCK BUILD REVERSES.

While stocks had been building more than seasonally from late spring through September, this accumulation diminished in October and reversed in November. With little incentive to add to inventories still 8 percent higher than a year ago, November's increased deliveries helped to draw down stocks by 8 million barrels, compared with an average 10 million barrel increase for that month historically. Most of the decline was in product stocks; despite the cold weather, distillate stocks declined only 1 million barrels and ended the month more than 10 million barrels above last November.

(In millions of B/D)	NOVEMBER ESTIMATES			YEAR-TO-DATE ESTIMATES		
	1986	1985	% Change	1986	1985	% Change
—Total supply	17.2	17.4	(1.4)	17.1	16.2	5.9
—Crude production[2/]	8.5	8.9	(5.0)	8.8	9.0	(2.2)
—Crude oil imports[3/]	4.4	3.9	11.8	4.0	3.0	33.4
—Product imports	2.0	2.1	(7.1)	1.9	1.8	5.0

1/ Total supply, i.e., production plus imports adjusted for net stock change is equal to total products supplied from primary storage. Total products supplied from primary storage less exports is equal to total domestic products supplied. Information contained in this report is derived from information published in the API Weekly Bulletin and is based on historical analysis of the industry. All data reflect the most current information available to the API and include all previously published revisions.

2/ Includes lease condensate.

3/ API data do not include crude oil imported for the Strategic Petroleum Reserve (SPR) nor crude oil stocks held in the SPR (according to the U.S. Department of Energy, the SPR held approximately 509 million barrels as of November 30, 1986).

ESTIMATED UNITED STATES PETROLEUM BALANCE

(Daily Average in Thousands of 42 Gallon Barrels)

Products Supplied/Supply From Primary Storage	NOVEMBER			YEAR-TO-DATE		
	1986[1]	1985[2]	% Change	1986[3R]	1985[2]	% Change
Products Supplied:						
Total motor gasoline	7,003	6,770	3.4	7,016	6,835	2.6
Finished leaded motor gasoline*	1,921	2,293	(16.2)	2,184	2,443	(10.6)
Finished unleaded motor gasoline*	5,082	4,477	13.5	4,832	4,392	10.0
Naphtha-jet	220	211	4.3	209	216	(3.2)
Kerosine-jet	1,254	1,066	17.6	1,106	991	11.6
Distillate fuel oil	3,070	2,747	11.8	2,883	2,832	1.8
Residual fuel oil	1,433	1,290	11.1	1,380	1,176	17.3
All other oils[4]	3,994	3,783	5.6	3,837	3,850	(0.3)
Reclassified[5]	- 344	- 363	(5.2)	- 326	- 255	27.8
Total domestic products supplied	16,630	15,504	7.3	16,105	15,645	2.9
Exports	791	1,036	(23.6)	759	768	(1.2)
Total products supplied	17,421	16,540	5.3	16,864	16,413	2.7
Supply:						
Domestic production:						
Crude oil[6]	8,459	8,902	(5.0)	8,773	8,966	(2.2)
Natural gas liquids	1,546	1,660	(6.9)	1,579	1,603	(1.5)
Other supply[7]	784	790	(0.8)	811	749	8.3
Total domestic supply	10,789	11,352	(5.0)	11,163	11,318	(1.4)
Imports:						
Crude oil, total	4,410[10/]	3,946[10/]	11.8	4,046[10/]	3,033[10/]	33.4
Canadian	561	443	26.6	545	461	18.2
Other	3,849	3,503	9.9	3,501	2,572	36.1
Products, total	1,968	2,118	(7.1)	1,933	1,841	5.0
Residual fuel oil	592	628	(5.7)	633	495	27.9
Other	1,376	1,490	(7.7)	1,300	1,346	(3.4)
Total imports	6,378	6,064	5.2	5,979	4,874	22.7
Total supply	17,167	17,416	(1.4)	17,142	16,192	5.9
Stock change, all oils	- 254	+ 876	XXXX	+ 278	- 221	XXXX
Refinery Operations						
Input to crude oil distillation units	12,975	12,629	2.7	12,826	12,111	5.9
Operable capacity	15,594	15,730	(0.9)	15,502	15,670	(1.1)
Refinery utilization (%)[8]	83.2%	80.3%	3.6	82.7%	77.3%	7.0
Crude oil runs	12,825	12,410	3.3	12,710	11,949	6.4

Stocks (millions bbls.)	1986		1985[2]	% Change from ...	
	Nov. 30[9]	Oct. 31[9]	Nov. 30	Previous Month	Year Ago
Crude oil 10/	344.8	347.0	320.9	(0.6)	7.4
Unfinished oils	101.1	103.7	109.9	(2.5)	(8.0)
Total motor gasoline**	226.7	222.1r/	217.0	2.1	4.5
Finished leaded motor gasoline*	65.0	63.7r/	74.5	2.0	(12.8)
Finished unleaded motor gasoline*	123.9	121.4r	108.7	2.1	14.0
Naphtha-jet	6.8	6.9	6.8	(1.4)	-
Kerosine-jet	41.7	43.1	36.4	(3.2)	14.6
Distillate fuel oil	150.2	151.4r/	139.7	(0.8)	7.5
Residual fuel oil	46.2	47.6r/	50.3	(2.9)	(8.2)
All other oils	200.7	204.0r/	150.9	(1.6)	33.0
Total all oils	1,118.2	1,125.8r/	1,031.9	(0.7)	8.4

1/ Based on API estimated data converted to a monthly basis.
2/ Source: U.S. Department of Energy.
3/ Source: January-September, U.S. Department of Energy, October-November, API.
4/ Includes crude losses.
5/ Beginning with January 1981, U.S. Department of Energy began using a new data collection system which encompasses a method to ascertain the amount of product reclassified during the production phase. So that there will be no double counting of these volumes, they are subtracted from total domestic products supplied.
6/ Includes lease condensate.
7/ Includes unaccounted-for crude oil, refinery input of other hydrocarbons, and processing gain.
8/ Represents "Input to crude oil distillation units" as a percent of "Operable capacity."
9/ Derived by interpolating API weekly stocks data.
10/ Data do not include oil imported for the Strategic Petroleum Reserve (SPR) nor crude oil stocks held in the SPR.
R/ Revised.
* Included in motor gasoline.
** Includes finished leaded, finished unleaded, and motor gasoline blending components stocks.